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MANAGEMENT

ON THE

NATIONAL FORESTS



A MEDIUM FOR THE EXCHANGE OF IDEAS AND
EXPERIENCES BY OPERATING EXECUTIVES
FOR THE BETTERMENT OF THE
SERVICE

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CONTENTS

	<i>Page</i>
Organization on Large Fires	
By S. A. Nash-Boulden, Supervisor, Santa Barbara, N. F.....	3
Reviews,	
A Personnel Program for the Federal Civil Service.....	9
Land! An Answer to the Unemployment Problem.....	10
The Breaking Point.....	13
Suggestions for Discussion.....	16
Discussions of No. 8—Follow-Up Training.....	18
By C. L. VanGiesen.....	18
Rex King	19
Lee P. Brown.....	22

ORGANIZATION ON LARGE FIRES

BY S. A. NASH-BOULDEN, SANTA BARBARA NATIONAL FOREST

While we plan and hope to control Forest fires in their incipiency, we know that a slight variation in the factors which influence fires will cause them to become large and since this fact is a matter of fire control history, it must be conceded that each and every fire under given conditions is likely to become a large one.

Fire statistics indicate clearly that most fires are controlled while small in size, due to conditions favoring rapid control, but that a small percentage of the fires become large and costly to suppress. Unfortunately it is this small percentage that destroys the larger acreages.

We can conclude then, that by and large, the average Forest officer has only a limited experience in handling large size fires and that as our method of control becomes more perfected the opportunity to gain this valuable experience will be reduced to a minimum. We must however be prepared to control large fires with the least possible loss of time or money.

The difference between handling a large fire and a smaller one is largely a matter of organization and correlating the efforts of several smaller units functioning under a competent directing head.

The term large fires, as used in this article, is intended to mean fires of several thousand acres and burning over several mountain ridges, canyons, etc., making it impossible for the fire chief to travel around the entire fire line within a reasonable time.

By organization we mean, in a practical sense, a scheme or method of doing things. It presupposes that the thing to be done has been given analytical thought and that the way to apply remedial or other measures is the direct result of this study.

The method once determined upon, should apply to all conditions of like character; in fact, it must be to attain the greatest degree of success. A fire control organization should be capable of rapid expansion without loss of control, yet it should be simple enough to be readily adapted to small fires.

What form of organization meets conditions best must be determined on the ground. Local conditions require various modifications of any plan but the essentials are the same for all conditions. It is the application of a uniform plan of action which is important.

PRESUPPRESSION

The organization plan should provide for contacting and obtaining the services of all cooperators within reach of the unit. Cooperative agencies should be enlisted for every purpose included in the plan of the organization. Written agreements should be made in all cases where it is possible. Particular pains should be taken to see that the various cooperatives are conversant with the organization plan and understand their part in the scheme of things. They should be trained and contacted as often as necessary to preserve their interest.

SUPPRESSION

For the purpose of discussion let us consider the organization in operation on a large fire.

First we have the Fire Chief. This man through experience must be able to size up the situation and visualize the job as a whole without undue loss of time; he must make decisions promptly and with reasonable accuracy. He must have plenty of forethought and planning ability; he should always be on the lookout for new and better methods, recognize good and bad practice and offer helpful suggestions for betterment. He must readily recognize the need of and use to advantage the men, tools, machinery and supplies available. A good Fire Chief never permits himself to be loaded down with petty detail although he must keep in contact with it through assistants; his function is with the major operation details of the fire.

He should have supreme command regardless of the size or difficulty of the situation, but he should confer with the best talent available and try to anticipate conditions which might arise.

It is essential that he have a sufficient number of competent assistants whom he can rely upon to carry out their responsibilities and to provide relief to assure sufficient rest to keep them mentally alert.

He should appoint qualified men as scouts or special detail men to examine work being done on various sectors. He should appoint assistants for every job which he can not properly handle so that he can give his best efforts to the strategy to be employed on the fire. From inspections and information received from assistants he must provide the plan of control.

Men should be provided who understand the operation and supervision of special equipment, such as pumpers, tank trucks, power grinders, tractors, plow units and similar equipment. To place such equipment in the hands of unskilled men only results in ineffective use and expensive breakdowns.

Communication should be provided where necessary, telephones installed on lines where needed, radio used whenever it is available, airplanes used for observation if conditions permit, etc.

SECTOR Boss

Sector bosses should thoroughly understand their function in the organization. Each should be assigned a definite portion or sector of the fire and be made responsible for its control. They should be qualified to handle and direct the fire fighting operation on their sectors with little direct assistance from the fire chief. They must have plenty of initiative and good judgment, which only comes from previous experience in similar types of country.

They should keep the Fire Chief informed of all unexpected events, changes or deviations made from the original plan.

The sector boss is responsible for the work done by the Division bosses and should take every step necessary to carry out the objective set for the shift of which he is in charge.

DIVISION BOSSES

These men work under the supervision of a sector boss.

They should not be assigned to a greater length of fire line than they can reasonably be expected to cover at sufficient intervals to keep in close contact with their crew bosses. The length of line assigned to them will depend largely on topography, visibility and mode of travel.

The Division Bosses should see that the Crew Bosses understand the instructions which have been given them and that the work performed by the men is according to the standard set by the Sector Boss. In turn he should operate his crews so that they will accomplish the work set by the Sector Boss. They should keep the Sector Boss informed of all changes in condition on the line and should make a point to report promptly anything which might in any way interfere with the objective set up for the crews for that shift. They should see that the crew bosses properly supervise the men, both on the line and in camp.

CREW BOSSES

These men have charge of from six to twelve men and work directly under the Division Bosses.

They must be made responsible for the efficient working of the men in their crews, and be responsible for their care on the fire line and in camp. They must see that their fire fighting tools are kept in good condition and that each man is given the class of work for which he is best suited. They should secure the confidence and good will of their men by showing an interest in their welfare. They must see that their men check in with the timekeeper, are properly fed, both in camp and on the line, and that they are bedded down during the off shift, as comfortably as conditions will permit.

CAMP BOSS OR CAMP SUPERINTENDENT

Next to the Fire Chief, probably the most important man in the organization is the Camp Boss. His success in operating the many details of the camp, including the equipment and supply are, more often than not, directly reflected in the line work done by the crews. Contented crews are the best fire fighters. To keep them contented he must provide the necessary comfort and food. He should confer with the Fire Chief often to keep in touch with the situation on the line in order to properly handle his job. Emergency crews must be sent out occasionally, crews from other camps must be fed at unexpected hours, relief crews must be provided for, equipment must be serviced and provided. In all of these details the Camp Boss must have an active hand. He must have this information ready at all times and must be able to provide for all contingencies, whatever they may be.

He should appoint such assistants as may be required as communication men, commissary, tool tenders, truck drivers, assistant cooks and all other detail which he can not attend to personally. However, he must keep in close touch with all the delegated authority as he might be required to assume these duties at any moment of the fire. Again, he must know the status of everything in camp at all times to properly supervise the work and give the required assistance to the Fire Chief and the line crews. As time permits he should make up a map of the fire and keep a current record of the fire. Another valuable

aid is a daily record or log of the fire operation. This usually can be kept by the timekeeper and it will furnish a ready record of all events in camp after the fire is over. For purposes of review, this record usually sheds light on many angles of the fire and provides the Fire Chief with information with which he can check various performances on the fire line. The record, if one is kept, should note the movement of all Forest officers, messengers, other key men in and out of camp, arrival and departure of men and equipment, record all messages received and sent, instructions for cooks and others, changes of plans and any information which it is felt will assist in helping to form a proper history of the fire which can be studied by the men who participated in its control.

DISPATCHERS

On Forests having considerable fire business, dispatchers are appointed. This is a responsible position and requires that the man have a good knowledge of the Forest and its fire control problem.

He sends men and supplies from labor or supply centers to the fires as requested from the camp boss or fire boss from scene of action, and makes necessary checks and follow up to see that such supplies, etc., reach the fire without undue delay.

In addition he has numerous duties to perform which are listed for his information and guidance in advance.

Some question may arise as to the need for all these bosses and overhead but it must be remembered that on large fires hundreds of inexperienced temporary laborers are recruited and if a reasonable amount of work is to be accomplished it requires a considerable number of trained men to supervise and control these laborers, especially under the handicap encountered by working men in mountainous areas under the most trying conditions.

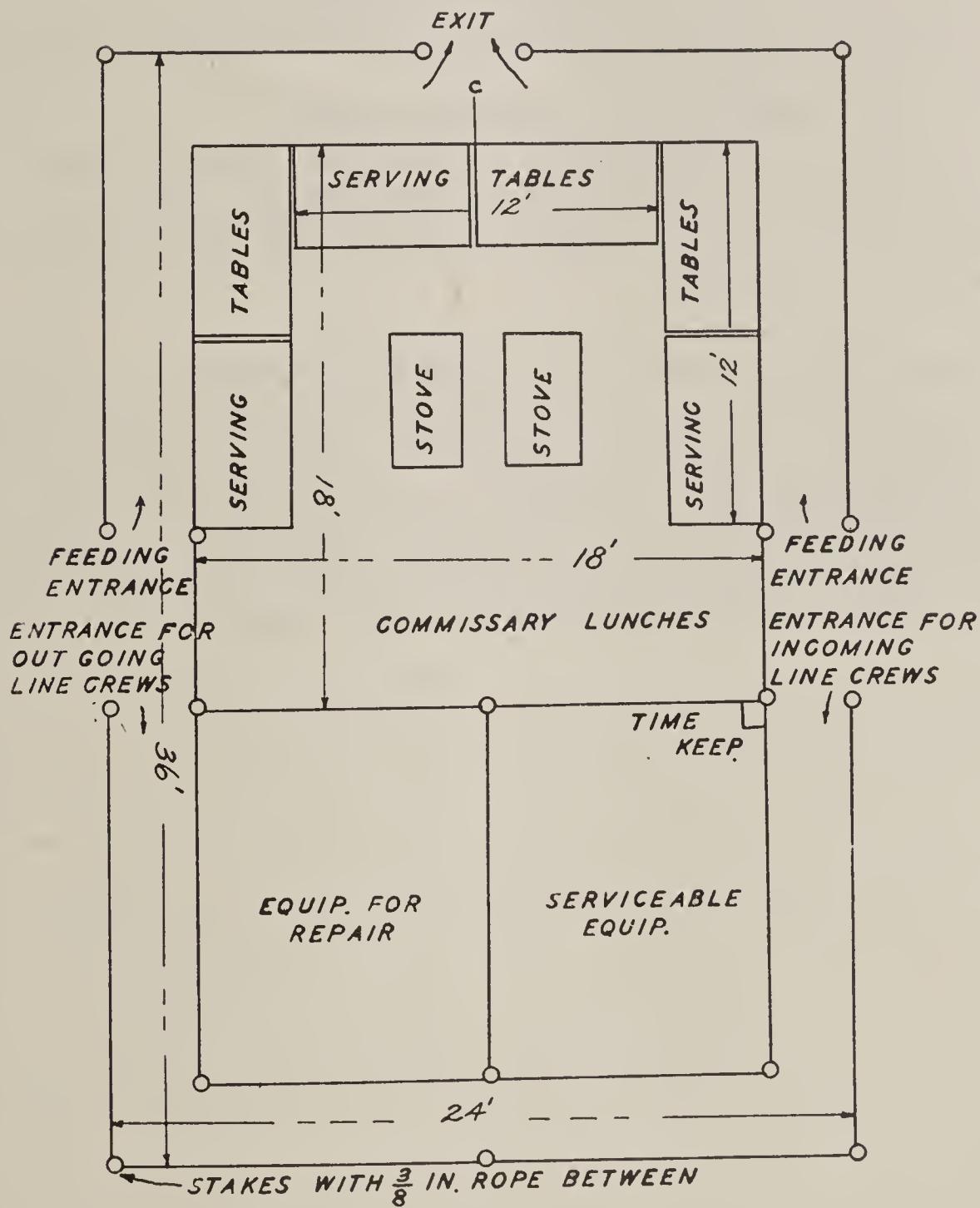
To provide an adequate number of leaders or overhead does not necessarily mean an increase in the total number of men on the payroll. It does however mean the laborers' efforts are supervised and directed toward the accomplishment of a definite objective resulting in the prevention of disconnected efforts and waste of time and money.

To summarize: A definite and really workable control plan is the foundation of successful operation. It must be uniform, understood and used. The load must be broken down commensurate to the job to be done. This precludes a top heavy organization and through more efficient management will materially reduce costs.

Build up the organization to the needs of the man power used and by the same token do not build up the man power beyond the available overhead.

SANTA BARBARA NATIONAL FOREST

FIRE CAMP LAYOUT



Place butter, milk, sugar, coffee, bread, jam, salt and pepper at least twenty feet away from the feeding exits to avoid bunching of men when feeding from both sides. 200 feet of rope will line out the camp and provide a surplus with which to expand the layout if necessary. This size layout will handle 250 men without crowding, and the minimum feeding rate should be ten men per minute.

FIRE CAMP LAYOUTS

The following may be considered essential to smooth operation of any fire camp layout:

The layout should be as compact as possible.

Guard ropes should be provided to preserve alignment of crews when feeding, checking in or out and to properly define the camp limits.

Large wood piles should be kept out of the enclosure.

Cafeteria style of feeding arrangement should be used and provision made to feed two lines simultaneously.

Garbage holes should be well away from camp.

Dish washing should be kept away from the enclosure except in cases where small crews are used and it does not interfere with cook.

Instruct the cook how to operate the layout and feed the men; he does not understand our methods.

Adapt your layout to the ground as you find it.

The camp layout should be so arranged that it will operate smoothly and care for the needs of the crews with a minimum of delay. The shape of the layout is immaterial; rectangular, round, "V" shape, or having the tables in one line may prove the best arrangement for the particular site. Any arrangement which provides facilities for rousing out night crews, checking them in and feeding them, and checking them out of camp in less than one hour is satisfactory. This standard should be maintained regardless of the size of crew.

REVIEWS

A PERSONNEL PROGRAM FOR THE FEDERAL CIVIL SERVICE

By Dr. Herman Feldman: Published as House Document No. 773, 71st Congress, 3rd Session.

Parts of this Bulletin were reviewed nearly a year ago. It is being brought up again because of its bearing on some of the things which are now being done or talked about and which may not be fully understood by all of us. The federal personnel has been the subject of much discussion, severe criticism, and unfounded, even malicious abuse. It is well therefore, for us to take careful stock. What sort of an employer is the Federal Service? Where does it stand in personnel administration and what are the prospects for the future?

This House document, as you know, was written by an outsider—an expert employed to make the study. And Dr. Feldman, as everyone knows, is a real expert in this line. His conclusions may, therefore, be safely accepted and deserve study.

I am not going to attempt another review but want to call your attention to certain sections which under the stress of circumstances may be overlooked. In the first place the mere fact that this study was made and that it was published by Congress is an indication of progress. It shows that there is interest and an attempt to learn. The report itself shows that while the federal service as an organization is lacking in many desirable factors, it still does have most of the recognized essentials of good personnel management, and best of all, is making progress.

One of its greatest weaknesses is the lack of prestige that Government work carries. (See pages 119 to 122) Because of the volume of unsupported criticism with no agency authorized to reply or to furnish the personnel with actual information as to what is being done, the employee loses in morale and in confidence and enthusiasm. Since the report was written such criticism has greatly increased. But at the same time, the Council of Personnel Administration, created only a year ago, has definitely recognized the problem, is studying it and has initiated steps looking to the development of such prestige as the position warrants.

Another agency that is working for the same ends, is the organized employee associations. (See page 24) These associations could exert a great influence for betterment if they were more universally supported by the personnel.

The weakness that concerns us most just at present is, I presume, the fact that the Government has no wage policy. (See p. 15 and all of Part I) There is nothing definite to which one can tie and no assurance for the future. The outstanding attraction of Government work in the past has been its security (See pages 7 and 182), but on the surface at least, this seems to be slipping. Positions are not secure either as to tenure or compensation.

However, before one gives too much weight to these surface indications, one should consider what has been done and what is being done which tend in the direction of a sound policy and future stability. You all know in a general way what has been done in job analysis (See Chapter III) and job classifica-

tion—preliminary steps to any scientific wage policy. You know of the creation of the Personnel Classification Board, but you probably do not know of the fundamental studies work it is doing or the high quality of its personnel. (See page 83) Also the President has created a Council of Personnel Administration for central direction and studies work. (See page 259) A very large part of the necessary basic work has already been done. This certainly looks hopeful for the future.

In addition to knowing what is being done to correct weaknesses, each one of us should know something of strengths and how the federal service actually stands when compared with industry.

In the first place the Government has in comparison with other very large organizations, an outstanding systematic, scientifically sound employment system that works—works smoothly and efficiently. Its proof is in results. It has selected an outstanding, high class personnel. It has a placement policy, a training policy, a rating system, and a promotion policy that is far above the average (See Chapters 8 and 9) All of this has resulted in the development of a very high grade, capable, enthusiastic personnel, each branch engaged in an important work in which it believes.

In the past each has confined itself too much to its own immediate job with little knowledge of what the other fellow is doing. It is very desirable that each unit and each individual know something of the other fellow's work and ambitions and ideals. The other fellow we will find, is just as interested, just as capable, and just as sure of the paramount importance of his job as we are of ours. The Forest Service makes its work almost a religion. Each bureau does the same. The total result is an outstanding organization of which the people should be extremely proud. They would if they only knew the facts. But how can we expect them to know? The First step seems to be for us to better inform ourselves. This House Document will help. It is in all Regional libraries.



LAND! AN ANSWER TO THE UNEMPLOYMENT PROBLEM

By John Crowe Ransom, Published in Harpers for July

This is one of dozens of articles, published in many different types of periodicals advocating a "back to the land" movement. The reason for taking it up here is that we as land managers should keep in touch with land movements, and also in that this movement will directly affect us if it really gets under way. Already it is beginning to be noticeable in some localities. That it has been so slow in starting is probably due to the counter movement, started by the Secretary, to take out of cultivation sub-marginal farm land, first for the good of the farmer and second, for general economic good in that it would increase prices and thereby increase the purchasing power of the farmer. The article calls this view "capitalistic farming" in contrast with his idea which he calls "agrarian farming".

The shift from the old-fashioned selfsufficient agrarian farm in self-contained units, to the modern industrial, "money-farming" with its effect on both agriculture and national economy is the author's basic theme. The

argument is that a shift back to the old agrarian type will relieve unemployment in that the land will absorb all surplus, and that the change in method would prevent the increased numbers from augmenting the present agricultural surpluses.

The article reviews the development of American farming as the basic industry of the country. In colonial times each farm was practically a self-contained unit. It produced primarily for its own use and was able to very nearly supply all needs. Money crops were incidental, and money was needed to supply only a few materials, such as coffee, that could not be produced in this climate. Each farmer was not only a farmer, he was also his own carpenter, painter, forester, weaver, woodcutter, nurseryman, meat packer, dairymen, etc. Everyone in the community was directly or indirectly connected with and dependent upon land. Professional men, trades people, and industrialists, all came from the land. If a teacher lost his job, a lawyer failed to develop a practice, or if a merchant or banker was unable to meet his obligations, each just naturally returned to the land. This was done as a matter of course and not as a planned social economy. The land furnished all with an occupation and a living. Even the least efficient could live. The land was thus a great reservoir from which everything sprang and to which everything returned.

As industry developed it drew its labor supply from the farm. In periods of prosperity high wages attracted many men away from the farm; in periods of depression they returned. In the past all depressions have resulted in a nation-wide movement back to the land. There was always land and the land provided an opportunity for all. There was no need and no demand for "bread-lines" and doles. The basic reservoir, the "staple occupation" could absorb all the unfit and the unfortunate. The "industrially obsolescent" man had not yet appeared.

Then the farm went industrial—efficient—capitalistic. The farm became a producing business instead of a place to live. Self-sufficiency gave place to money-cropping. The farmer specialized in the crop for which his land was best suited, studied cultural methods and adopted labor saving devices in harvesting and marketing. The result is over production, low prices, bankrupt farms.

The failure of capitalistic farming seems to be a natural economic result. When put on a capitalistic basis the industry is over capitalized. Its basic capital is the land itself. There is enough of it, when efficiently managed, to produce easily two or three times the volume of products that the market can absorb. Such excess production ruins the market. To correct the evil, various farm-relief measures have been tried. Also there has been attempts to reduce the producing capital through restricting the use of sub-marginal land. All such restrictive measures have failed and the author thinks must necessarily fail. Capitalistic farming is controlled by economic law.

The author, Mr. Ransom, thinks also that the answer is to go back to the old agrarian self-sufficient type of farming. This will not only correct the difficulties of agriculture but will absorb the twelve million or so industrialists that are unemployed. Fortunately there is still plenty of land.

The author, unfortunately, does not propose a method for getting the

people back to the land. In the past that was accomplished through homesteading. The unemployed went west and took up land from the public domain. No particular capital was needed. The land was free. But now all that is changed. The marginal land is already in private ownership. Of course, a way could be found, but none is proposed.

The article recognizes that adding more land to the producing area without changing the method of use would only aggravate the difficulty. Yet no suggestion is made as to how to effect the change. If men were returned to the land and if they would adopt the old method of supplying for themselves every possible want that the land is capable of supplying and again make marketing money-crops a secondary factor, it is certain that the land would absorb the industry of a great many more men, and it is possible that it might again become a great foundation industry for society, capable of providing for the least efficient and the failures in the competitive warfare of commercialized industry, as well as providing an inexhaustible, yet elastic labor supply—a reservoir from which labor can be freely drawn in times of prosperity and to which it can be returned in periods of depression.

Such a situation would certainly be ideal from the industrialists viewpoint, but how is it going to be created? Getting men on to the land would be much easier than changing the system. What incentive could the self-sufficient type of farming offer that it has not offered in the past? What new incentive could be added and by whom? The fact that it offers greater stability and assurance for the future will not suffice. Neither will the failure of the capitalistic method deter. The farmer will continue to be individualistic enough to gamble his modest living against the prospect of wealth.

My personal conclusion therefore is that the proposal is impractical and will contribute nothing to the solution of the difficulty. As said before there is no possibility of getting the unemployed on the land. The producing land is in private ownership. It takes capital to acquire it and more capital to equip and operate it. The unemployed have no capital. To farm in the suggested self-sustaining manner requires skills in a hundred different jobs that the unemployed know nothing about. Further there is no place that they can learn. That is, the unemployed cannot get land; they cannot get equipment, and they could not operate on the basis suggested if they had the land and equipment. The scheme proposed is not only impractical but impossible. It is probable that this applies also to all the other back to the land proposals. The only land available to the unemployed is submarginal land, some of it far below the margin. A movement to such land has been started. Instead of relieving the situation it can only accentuate it. It can result only in much hardship, disappointment and destruction of human values. While the Service is promoting the use of the forests as refuges, furnishing fuel, a place to live and even a garden, yet it seems that we should be careful in allowing the listing of submarginal land. Leaders in agriculture still think that the result would be just the opposite to relief.

THE BREAKING POINT

A discussion of technological unemployment by Arthur Pound;
Published in the Atlantic Monthly for June

This article is chosen primarily because of its availability. It is merely one of hundreds of articles dealing with the use of machines, the five-day week, the six-hour day and other phases of the increased effectiveness of individuals as related to unemployment and suggestions for relief. The reason for discussing it here is our own relationship to the movement. We too have increased our effectiveness through a more systematic use of time and facilities and have been able to release a number of positions, and have thereby added to the total of the unemployed. This vast army of unemployed is a great national calamity. Some men have been wondering in their own minds whether we did right in tightening up to the extent of reducing numbers. As a matter of fact the total number of employees has not been reduced, only differently distributed. But the fact remains that more men would be needed under old methods. Would the old methods better serve the general good? It is a world-old problem. It is particularly acute just now; which accounts for all the discussion. Will the answer be what it always has been in the past or will today find a new answer.

In the winter of 1930, the selling of apples on street corners and in the lobbies of buildings became the standard occupation of thousands of the unemployed; then one morning we saw in the lobby a shiny new apple vending machine—drop in a nickel and out rolls a bright red sanitary apple. This last refuge of the unemployed had been taken over by the machine.

The author uses this as an example of what has been and still is happening in industry. Any repetitive job that must be done times enough to make it a factor, will eventually be taken over by a machine. At least this is suggested by our experience in the past; job after job has been taken over by the machine, then a larger machine synchronizes a group of jobs done by smaller machines. The engineering ideal is the manless factory. Contrast this with the social ideal which makes work for everyone a part of our religion.

Just to what extent this shift from man to machine has gone no one knows. It is extremely complicated.

For example, when "sound" was introduced in the movie houses it threw musicians out of work. This affected also the teachers of music, the makers of instruments, the number of salesmen, etc. It also affected vaudeville theatres and indirectly many other businesses. At the same time many business organizations reduced their force through better planning and through wage incentives for greater volume of work.

The following statistics indicate the extent to which this has been accomplished. The increases are by industries and cover only the period from 1923 to 1927:

Tobacco—increased production 53%, decreased force, 13%
Meat—increased production 20%, decreased force, 19%
Coal—increased production 40%, decreased force, 15%
Steel—increased production 8%, decreased force, 9%

Other more striking examples could be given. For example, in Milwaukee, one plant equipped with mechanical "dragons" made as many automobile frames with 200 men as were made in an adjoining plant with 2,000 men.

The orthodox explanation of economists is that the change to machines releases purchasing power which is directed against new goods and in this manner the released labor is reabsorbed. Another theory is that the machine reduces the value of the man to industry and that the men cannot be reabsorbed until wages are reduced to values. Both theories, in fact all theories, admit a time period for readjustment. It is this period that gives us the unemployed.

The difficulty seems to be in the fact that our social system is built for stability while our industrial system is organized for change. We preach the wisdom of Jefferson and Hamilton on the one hand and worship the creative genius of Edison and Ford on the other. Industry is organized for change. Anything in industry that is ten years old is like a '22 model car, while in government age increases prestige. The resulting maladjustments are otherwise known as "problems" or "crises". The two, Government and industry, should develop together.

That industry is organized for change and that changes will probably be greater in the future rather than less, is indicated by the fact that there are now in this country 1000 well equipped industrial laboratories. Each of these is manned by the best trained of specialists all intent upon finding something new. In addition to this is the greater volume if less formal research done everywhere in connection with other work by the regular production organizations. Is it probable that industry will no longer change?

To meet the unemployment inevitably resulting during the period of adjustment to change various methods have been proposed. One method is to meet it through restrictions to change; another is to tax the machine and use the tax as an adjustment fund; another is to reduce wages; unemployment being caused by wages being higher than the value of men; still another is to reduce the hours of labor, and last industrial planning, which might involve all the others.

Restrictions on change, to permit adjustments to keep pace, has been practiced in the past and might be greatly extended. The Government has done it through patents. The labor unions have done it in various ways. Employers do it through holding patents out of use, holding up changes in design for better markets and in other ways. It could be done but it will not. It is too foreign to our industrial ideals to be accepted at present.

The five day week and the six hour day are much discussed and sound attractive. The result of a general reduction of working time is estimated differently by different economists. Some think it would alleviate the difficulty to some extent while others think it would augment it. Few if any think that it would be a cure. Dr. Carver says that there are four errors in the reasoning of those who advocate the reduction of working time as a remedy for unemployment.

First, it does not reduce unemployment, it only smears it more evenly.

Second, more leisure does not necessarily increase the demand for goods.

Third, if men receive the same wage it would increase the unit cost of the product. This would increase the price which would reduce demand and

thereby cause further time reduction. If wages are reduced it reduces the purchasing power which again reduces the demand and results in further cuts.

Fourth, it is a mistake to assume that a reduction in all industries would be the same as reduction in a few.

Anyhow, could a reduction be enforced? How could it be handled and if not universal would it be effective?

The article is concerned with what it calls "the breaking point". That is, how many unemployed can the country carry? One million would scarcely be noticed. When five million was reached it began to cause concern. Now at somewhere around twelve million it is a major catastrophe. How much further can it go and what will happen? Equally important, what will be learned and what will be done to prevent a reoccurrence?

The author, and many other engineers and economists think the trend is toward industrial planning. This remedy seems to appeal more to engineers than to business men but is receiving a great deal of consideration from the latter. It is the most talked of method that seems to offer any chance of solution. There are difficulties to overcome. Further, there is little chance that we will jump into it all at once. The approach will be gradual, a trial and error, feel the way proposition. Progress will be faster in some industries than in others. Some may never be planned. But planning in some form seems to be the only way to save the enormous human scrapheap that we are now developing.

The above is not entirely taken from the article listed but contains also some material from "The American Economic Review" for March.

Now what does all this mean to us, if anything? First, does it not mean that we have done our part in that we have reabsorbed the losses due to job obsolescence in our own organization. Second, it shows the futility of attempting to stand still just to protect jobs. We must go on. Third, we must keep organized for change. There is a strong pull toward stabilization. This must be overcome. We must change. Fourth, we must be ready to respond to change in other organizations—anticipate their changes. This is the most difficult of all, yet the most necessary. Industrial planning will affect us. It will probably come first in industries with which we are associated. Will we be ready for it?

SUGGESTIONS FOR DISCUSSION

The general plan of organization as outlined by Boulden seems to be that in use in all Regions. Further, it is in line with the principles of good organization as we studied them in our course a year ago. It recognizes that any one man should have direct supervision over only such number of men and over such physical factors as he can keep in touch with. It recognizes the principle of definite responsibility, accountability, etc., and provides for that orderly arrangement and subdivision of activities for which all organizations strive. This all seems simple and easy. Then why the problem—or is there one?

From talking with experienced fire men and listening to them in conferences, I find that the following are the problems most often mentioned. There is no attempt to arrange in order of importance since I do not have sufficient data for doing so. The third is most often mentioned in conferences. That would indicate importance. I have been told by experienced men that "one" is the biggest problem, and by others that it is no problem at all. Some real analytical students have told me that two is the biggest problem, that if fires were all the same size, organization would be no problem at all. Others seem to think that the problems of organization are pretty well solved, procedure, standardized, and all that is necessary now is for forest officers to follow instructions. Which view is right, or is any of them? The so-called problems are:

1. The time element involved—the necessity for organizing large numbers of men in minutes of time.

If fire suppression was like most jobs involving like numbers of men organization would be relatively simple. Suppose each fire lasted just six weeks; then there would be time to assemble and organize the crew and see that it functioned according to plan. That would be simple. But the way it happens is more like this: a fire gets away and spreads to a forty mile perimeter in one afternoon; 800 men must be assembled, organized and worked effectively an average of twelve hours before tomorrow noon. This leaves only three or four hours in which to assemble, organize and equip. The work is spread over forty miles but must be directed by one man acting through this hastily built organization. Carter, in pamphlet No. 8, page 18, says: "Organization of fire crews has to take place on every large fire. I should like to see some uniform practice developed along this line*****". We have a standard form of organization, should we also have a standard method for effecting that organization?

2. The difficulties a man has in realizing the difference in his job due to differences in size of fires.

For example, a ranger is used to handling small fires with crews of from 25 to 50 men. His job then is to direct the work of two to four straw bosses. He gets a fire ten times as large. He should now direct sector bosses but does not know how. He tries to handle it in the old way by direct supervision of straw bosses. The method breaks down and results in confusion and disorganization in various degrees.

3. The gregarious tendencies of men. The crew instead of remaining scattered over ten miles of line collects itself into groups.

4. Keeping the work in balance.

The swamping crews gets a mile ahead of the trench construction crew. Or you are in heavy down timber and snags and have 60 men on saws. They run out of work about two o'clock. What are you going to do with them the rest of the day?

5. The need for constant reorganization together with a conflicting need for both standard methods and flexibility.

You no sooner get organized on a fire than something happens—the wind changes, a quiet sector becomes active, the fire makes a fresh run into a dangerous area or it quiets down where you thought you would have a hard fight. Shifts of men, shifts in methods, shifts in plans gives every possible opportunity for disorganization and confusion; on the other hand it gives an opportunity for the highest type of planned, directed, organized effort. Keeping organized is a big organization problem.

There are other problems in the camp as well as on the line. All of these problems must be met, studied and some systematic method developed for meeting each. To some extent these methods may be standardized. Whether standardized or not, each man must be prepared to advance to meet each problem or they will not be met.

QUESTIONS

1. What are some of the other outstanding problems in organization?

2. Is there need for a standard method of organizing large crews as suggested by Carter? (This refers only to the organizing not the form of organization)

3. What is your method of meeting some one or two of the outstanding problems of organization?

4. During the past year we have talked a lot about administrative studies. Is organization for suppression one of the things that might be studied? Who has a suggestion?

5. Discuss any other problem or point of view raised by Boulden's paper.

May we have your discussions by September 30?

DISCUSSIONS OF NO. 8—FOLLOW-UP TRAINING

This is the first time I believe that I have ever published all of the discussions sent in. Of course, we did not expect so many discussions at this time of year, but I doubt whether the season was entirely responsible for only three. Carter's paper was an extremely hard one to discuss. It was a well-planned, well-written presentation of an effective training procedure about which few exceptions could be taken. In general it raised no controversial points. Then, too, I did not help any with my questions. They were too general. If I had asked questions about some specific statements of Carter's I believe I would have gotten response.

For example, take his next to last paragraph. He wants a Service instruction book for short term men. I don't believe we would all agree that this is a good thing. Or consider his statement in the next to last paragraph on page 17, about training on actual fires. This is so important that I am considering it as the subject for a lesson. We have discussed most of the other phases of training, but have not yet covered training on the job in suppression. We have all gotten our best training in that way but it has never been planned and directed training. How can we get better training on going fires, and who will take on the job of writing it up for me?

Another subject, mentioned by Carter and discussed by the first of these papers, which I think might also be used as a lesson subject, is the training of cooperators, or wardens. I saw some of that this spring. Some very fine work is being done but it seems to me not nearly enough. I think there is going to be developments along that line. Who wants to write it up?

Another thing that interests me about these discussions is what one of them says about the labor supply and methods of selection. In spite of the abundant labor supply selection is not simple, and men have been influenced by conflicting motives. Many have been influenced by the needs of the applicants. Others have given considerable weight to the past. That is, if a man has stuck by us when times were good should we not stick by him now that times are bad? Others are thinking more of the future and are trying to interest good men to the extent that they can hold them after conditions go back to normal. Some good men cannot be held.

C. L. VANGIESEN

ROOSEVELT

FORT COLLINS, COLO.

There is no doubt that Carter and his associates have put considerable thought into training, and follow-up training and records. There seems to be very little in his methods, however, that can be directly applied in this Region where the protective force is made up largely of cooperators living within and adjacent to the Forests. Without knowing the conditions in the Northwest, I am not qualified to intelligently pass on Carter's procedure. It is my reaction, however, that this intensive training and elaborate records might become very cumbersome where there is an inadequate or changing personnel. The changing personnel applies equally to transfers in our permanent force or rapid turn-over in the temporary employees. It would seem to me that a Forest officer transferred to a Forest would require from one to two years to absorb the system and local conditions sufficiently to be able to

train intelligently unless a standard method was in force throughout the Region. Also in normal times, when the turn-over in the temporary force is rapid, the average man, only employed for a few months, might be hopelessly confused by the intensive methods and not gain much practical training.

I sincerely hope that the training methods applied in Region 6 are practically eliminating errors in fire prevention and suppression work. I am sorry to say that in the two Regions where I have been on fires, mistakes in suppression technique have been common by temporary men and perhaps more by the permanent employees. It is obvious that before any of us are qualified to train temporary men in the very intensive manner outlined by Carter, we should be intensively trained by the same system, tested on going fires of all classes, and found to be proficient in all phases of the work. In other words, wrong teaching is worse than no teaching, since the trainee may have better "horse sense" than the trainer. Personally, I have always resented being trained by one who does not have a first-hand knowledge of the subject involved. These comments apply to an intensive system such as Carter uses.

It is quite probable that the greatest weakness in training our Fire Wardens in this Region lies in inadequate training and follow-up records. As a matter of fact, however, our present records of Warden training are as comprehensive and complete as those of most of the permanent employees. Do many of our personnel folders contain even statements, such as the following: "Ranger John Doe was trained and tested in line organization and mop-up on the Deer Creek fire. He capably handled this work. He is weak in camp organization and transportation." We should be careful that we do not try to force something onto temporary men which we are unwilling to take ourselves. The administrative plans are a very good example. Rangers feel that Assistant Rangers should follow them religiously, Supervisors feel that Rangers should adopt them whole-heartedly, and Regional Foresters feel that Supervisors cannot get along without them, and so on, but each in his position feels that the plans are not adapted to his own use. In other words, we may need castor oil but prefer that the other fellow takes it.

REX KING

CROOK

SAFFORD, ARIZONA

I missed lesson VII, but since it and lesson VIII are on the same general topics whatever I have to say applies to both.

The thing about both of these lessons which has struck me the most forcibly is the difference in the guard training problem between forests having 50 to 100 guards and those having 5 to 10 guards, and the size of the job on the former where the job *must* be a highly specialized and carefully worked out one. Since I have had no experience with such conditions any remarks I make will be purely theoretical. However it does not necessarily follow that a forest having only a few guards is without its problem. The very fact that only a few guards are employed is evidence that the type of country is greatly different and that the guards will be more scattered, which introduces a greater unit problem of communication and inspection. Since we do not use the fire finders, but rely on knowledge of the country and landmarks, greater care must be used in selecting men, something not covered in the lesson, and must rely to a larger extent on the man's horsemanship and ingenuity in getting

through. Moreover, within the area of a guard's responsibility may be a range of conditions extending from one extreme to the other. It is impossible for him to determine before he starts exactly what type of country the fire is in, and it is therefore necessary to rely on his ingenuity and initiative as well as his previous knowledge in suppressing the particular fire, which he has to deal with. In other words, on the forests where there are few guards and comparatively few fires the work cannot be as highly specialized as on the high fire forests. Fire is merely one of the problems fitting into the whole pattern of forest administration, and therein lies a danger in that fire may not be given the thought and study which it deserves. I mean that big fires come from little mistakes and such mistakes cannot be corrected, they must be prevented by careful forethought.

Kuhn's and Carter's papers seem to me excellent, and in my admitted state of unfamiliarity with their conditions they awe me with the degree of study and detail which has gone into them.

There can be no argument that a man who desires to learn will learn. If he desires it strongly enough, it is impossible to keep him from learning; if he desires not to partake of the spring of knowledge then the trainor is in exactly the same position as the man who led the horse to water, but couldn't make him drink. Incentive I believe, is the biggest single item in the training problem.

Probably much is to be gained by letting the trainor have a good deal of lee-way in his method of training, but at the same time there is also much danger. There is generally one best way of doing a thing, and although some departure from it may be advisable to give freshness, interest, and pep, it must be remembered that if it is the best way, any departure from it must be in the opposite direction. Obviously different personalities must be approached and handled in different ways, but it is my impression that you did not refer to this in the question. Moreover, personalities may be classified and their handling systematized to a considerable extent.

As to how long trainees should be forced to listen at one time depends on the incentive on one hand and the interest of the course on the other. These same trainees would no doubt have no difficulty in sitting on the edge of a bunk for five hours at a stretch and listen to the exploits of Paul Bunyan. Their interest would not lag and they would remember what was said. Another angle is that men frequently sit in waiting rooms for a half-day at a stretch constantly alert and watching the door in the hope that the head of the firm will come out and offer them a job. Men who do physical labor, involving little mental effort or training are naturally short on mental endurance. This must of course be taken into consideration, however, I see no reason for jumping at the conclusion that all trainees are incapable of absorbing training for more than one hour at a stretch. Why not divide them up as soon as possible and let the good ones go ahead at their own pace rather than hold them back to the level of the mentally slow ones. Of course much depends on the class of men to be instructed; are they middle-aged lumber jacks, college football players or wild cow punchers. But in case of doubt always bear down on demonstration.

Three days is a very short time to teach a subject as big as Carter's check

list shows this to be and no time can be wasted in generalities. Only details and the necessary motions should be retained and generalization and philosophy left out.

I don't know whether Carter's methods are good or bad or whether they are too bookish or formal or anything else, but they are the ones which I would follow if I were in a similar situation. My impression from reading them over is that they change a deep mystery, a supervisor's night-mare, a fire danger obsession into an understandable, workable job, which one can tackle with the expectation of completing; and while plodding along on the job can see the end of it and thereby avoid that sense of hopelessness that we all get when we work blindly from day to day.

Telephones may go out of commission sometimes (I have noticed that the more slopily built and maintained the oftener they quit working), but why should there be any question of using them too much. Telephoning is an art and the more one practices it the better off he is. Lookouts, firemen, etc., have lots of time to spare in the evening and would even welcome serious lectures on fire or anything else. The Sharkey-Schmeling fight came over the wire to a guard station I was at the other night. Why not cut in a howler or loud speaker at the guard cabins and give the boys a little jazz, under which is concealed some morale building propaganda, instructions, etc.

Personally I am strong for check lists. I do not think it is necessary here to go into the question as to whether I have a weak mind or not, and whether it is entering on that long slide to senility, but I *need* them. Moreover, I know very few people who do not need them. I can think of several reasons why they are not used more than they are; one of which is that we do not have them, and it is a hard job to make one and the author must thoroughly know his stuff or spend years in studying it. Another one is they are not fashionable; another is that the user might be suspected of not knowing the manual and all of the circular letters by heart, and still another is that using one cramps one's style and keeps him from giving play to his personality.

I am not in a position to say whether Carter has left out anything or not for that forest. I can think of a few things which would be treated differently on this forest, because of the difference in the entire fire problem.

Such lists should of course fit particular situations, but it might be better to say that they should be modified to fit the occasion rather than they should be developed to fit one. Probably 75% of a check list would be uniform for the various situations in a district and would it not save a great deal of time, and start the ball rolling in their preparation and use, by developing a list which would be standard for a group and leave it to be adapted and completed on the individual forest? I can not believe there is much danger in a check list being too detailed. It is of less importance that some items be ignored and not commented on in the field than it is that something be forgotten and not checked up on while on the job.

There are no doubt places where the sample plot method is satisfactory and others where it is absolutely necessary because of the lack of time, but for most cases in which the Supervisor is involved it is taking chances and never can be as satisfactory as a complete goingover.

As to publishing the lessons during the so-called field season, I see no

reason against it, and I can see some things in favor of it. The subject of these lessons, it seems to me, is not one which is purely limited and which definitely comes to an end. It is not a tree to be cut down, sawed up, and the brush carefully disposed of, and the job labeled finished and forgotten. To treat it as such means that once having completed it during the so-called office season it is pretty apt to be filed away in the closed memory files. Just as long as there is another lesson due another chance to talk about it, another obligation to be performed in connection with it, it will remain an open subject and occupy our thoughts and I would prefer to see it kept in the open files.

LEE P. BROWN

OLYMPIC

OLYMPIA, WASHINGTON

A few years ago the logging camps and other industries on the Olympic Peninsula were paying high wages and getting the cream of the local labor. Occasionally we secured a man of outstanding ability who through a high sense of idealism, lack of commercialism, or because of personal preference, worked for us. With these exceptions we had to take what we could get, which wasn't always as satisfactory as we might wish. Now that these industries have been idle for about two years, we are getting a better choice. Many men who worked for us, developed and went on to better jobs are returning, glad of the chance to work. While they are learning the job anew, we are also absorbing much from them in business methods, point of view and the like.

Having just finished two guard training schools, I was struck with the general pick up and increased quality of the short term men over previous years. In preparing for the schools, I did several things which have not been done in previous years. They were:

1. A three-day conference with instructors in teaching methods, trying to get away from the lecture and into the doing. Lessons plans and a general program was also determined as to what we would and would not teach.
2. We tried out small group and large group training with a few general subjects taught in class formation to the entire camp.
3. Some instructors taught several subjects. Others specialized on one.
4. District rangers carefully analyzed each man's training needs.
5. I correlated the individual training needs into a definite program by grouping individuals needing similar training into squads.
6. Older and experienced men were given a maximum of advance training.
7. I used the conference method of training among the experienced men, outlining a fire on the blackboard in colored chalk, having one man fight it, keeping track of the time he would consume and the order in which he would do the work with the usual crew he would actually have in fighting such a fire. Outside of having to act as referee and direct attention to certain points, I had little to do. The men nearly wore the blackboard out, and each fire was cussed and discussed from all angles, and every man expressed his own ideas. Knowing the men, their individual territory and problems and experience, I was able to follow their reasoning closely even though it was not always expressed.

As a wind up, individual fires were set. The men had to fight and put out

small fires. This was particularly good training for the new men. At one camp a large dummy fire was used for training fire organization on project fires. The men did not get as much out of it as they did at the second camp where an area of between $\frac{1}{2}$ to 1 acre of slash was fired. Due to the weather, it was a poor fire from my standpoint, because I had three rangers busy spreading oil and flames in an effort to get a run of fire line and somewhat simulate actual fire line conditions. From the men's standpoint, it was a huge success, and I sincerely believe that the excitement and ball up in the handling of men and the delegation of authority experienced there will work for much smoother action on an actual fire. For example, one strawboss left his crew to fill a couple of waterbags. The razzing the men gave him the rest of the day made it unnecessary to call attention to his error. I'll wage that he will never again leave a fire line nor will he do what he should have the men do. For the rest of the summer he will be called "Water Bag Pete" by the other patrolmen.

But to go back, since these schools, several reports and other indications have come that this season's guard schools were better than before.

1. The pre-school training gave the instructors much more confidence than they ever had before, and they got away with the job better. Although every effort was made to make all instruction a doing job instead of a lecture, we still have room for progress. In this connection, I wish to cite the following incident: The Ranger and I had previously rejected much of Region 5's training lessons as being too elemental, since most of our short term men were former lumberjacks, timber cruisers, woodsmen and men picked from our improvement crews, skilled in the use of their tools, and with some experience on fire. In teaching two advance squads of experienced men who were getting strawboss training how to approach and instruct an inexperienced fire fighter or awkward man how to use his tools, I chose the shovel for a demonstration. Imagine my surprise to discover that many of the tricks of using a shovel to dig, scrape and swamp out a fire line were unknown to them. The squads became so interested in becoming proficient in the use of the shovel that I had difficulty in bringing them back to the ideas I wanted to get across. So now I am not so sure perhaps we should teach A.B.C. and take nothing for granted, graduating a man through a series of training camps spread over a period of years.

2. The small group of 2 to 4 men per instructor is much better than the large group of 6 to 8 men unless an assistant instructor corresponding to a laboratory assistant in college is assigned to help, so in the end it amounts to about two small squads. There is this advantage that the assistant can be an especially qualified short term man. It has the disadvantage of robbing the assistant of a chance for advance training which he may need. By using all the instructors as assistants, a few subjects such as office forms can be taught to a class.

3. An instructor should not be called on to teach more than one major or two minor subjects. If possible, he should have at least two hours' rest every day to relax and organize his thought between classes. The mental and physical fatigue of eight hours intensive class work on a man not accustomed to teaching is I believe equal to 12 hours of handling a crew on a fire. This is an added reason for not having one man try to teach too wide a field. I

know that this is a controversial subject, and I merely express my opinion and observations, leaving others the right to their ideas on the matter.

4 & 5. The analysis paid big dividends, but it about trebled my work of scheduling and organizing the classes and squads. Before I finished, I had a sheet as complicated as Vetter's. I think that the work paid dividends in the results.

6. We tried out a part of Carter's plan and his reminder lists for camp boss, strawboss, etc., in our advance guard training. The results were gratifying. The rangers and I previously went over copies of the Mt. Hood reminder lists, left out what did not fit and added a few ideas of our own. I think however that there is too much detail if one attempts to use the list as anything but a reminder. I can't conceive of a fire chief wading through 437 items to be sure he hasn't overlooked any. He either knows his job, or he doesn't.

This is the only point where my discussion actually touches Carter's paper. Carter I believe has done a great deal of analytical work in the fire suppression game. He is however an exponent of forms and charts which are, to many of us, a burdensome and unhandy tool. In other words, while I conceive that these have their places, I contend with Bill Fay that there is no substitute for personal attention and leadership in selecting and training and developing personnel and fire organizations. Tom Carter has that leadership and it is one reason he has been so successful in the methods he has developed and uses.